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**Malchano et al.**(10) **Pub. No.: US 2021/0121713 A1**(43) **Pub. Date: Apr. 29, 2021**(54) **METHODS AND SYSTEMS FOR NEURAL STIMULATION VIA VISUAL, AUDITORY AND PERIPHERAL NERVE STIMULATIONS**(71) Applicant: **Cognito Therapeutics, Inc.**, Newton, MA (US)(72) Inventors: **Zachary John Hambrecht Malchano**, Boston, MA (US); **Martin Warren Williams**, San Francisco, CA (US)(21) Appl. No.: **16/919,975**(22) Filed: **Jul. 2, 2020****Related U.S. Application Data**

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(57)

**ABSTRACT**

Systems and methods of the present disclosure are directed to systems and methods for treating cognitive dysfunction in a subject in need thereof. The system can include a light source and a speaker. A visual neural stimulation system provides, via the light source, visual stimulation having a first value of a first parameter. An auditory neural stimulation system provides, via the speaker, audio stimulation having a second value of the second parameter. A stimuli orchestration component selects, for a first time interval, one of the visual stimulation or the audio stimulation to vary based on a policy, selects, for the first time interval, the other of the visual stimulation or the audio stimulation to keep constant based on the policy, and provides causes the one of the visual neural stimulation system or the auditory neural stimulation system to vary the one of the visual stimulation or the audio stimulation.

